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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/377,081 | 08/19/1999 | PATRICIA GRASSO | 19705-001-(A | 7358 |

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MINTZ, LEVIN, COHN, FERRIS, GLOVSKY
AND POPEO, P.C.
ONE FINANCIAL CENTER
BOSTON, MA 02111

| EXAMINER |
|---|
| SAOUD, CHRISTINE J |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1647 | 20 |

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

| Application No. | Applicant(s) |
|---|---|
| 09/377,081 | GRASSO et al. |
| **Examiner** | **Art Unit** |
| Christine Saoud | 1647 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on *Nov 6, 2002*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) *1-18, 31-34, 39, 43, 44, 46, 47, 49-55, and 57-61* is/are pending in the application.

4a) Of the above, claim(s) *5, 43, 44, 46, 47, 49-55, and 57-60* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-4, 6-18, 31-34, 39, and 61* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06 November 2002 has been entered.

### *Response to Amendment*

2. Claims 1, 4, 12, 61 have been amended as requested in the amendment of paper #18, filed 06 November 2002. Claims 1-18, 31-34, 39, 43-44, 46-47, 49-55, 57-61 are pending in the instant application.

### *Election/Restriction*

3. Claims 5, 43-44, 46-47, 49-55, and 57-60 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 11.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-3, 7, 8-18, 31-34, and 39 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant asserts that the claims have been amended to expedite prosecution and that the claimed "purified leptin peptides have sequence selected from the novel small peptides disclosed" in the specification. This argument is not persuasive because the claims still encompass fragments, homologs, analogs and derivatives of the peptides, wherein the peptides have 80% homology to any one of the sequences of SEQ ID NO:2-10, and 18. Therefore, the claims still are directed to a genus of molecules for which a complete structure is lacking in the instant specification. The instant claims encompass "homologs, analogs and derivatives" of a purified leptin peptide. The instant specification indicates that these terms are directed to species homologs (page 20), variants which differ from the polypeptide of the present invention "but retaining essential properties thereof" (page 20), peptides which are related to animals, insects, plants, or human leptin (page 21), and that such can be isolated (see page 21) using hybridization techniques. However, the instant specification fails to provide an adequate written description of such "homologs, analogs or derivatives" such to reasonably convey to one skilled in the relevant

art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As the instant claims are directed to subject matter which has yet to be described or isolated, the instant specification lacks a written description of this subject matter, absent evidence to the contrary.

Applicant argues that one of skill in the art could make peptides on a protein synthesizer with the sequence information provided in the specification and "recognize homologs to the claimed peptides" (see page 4 of the response). This argument is not persuasive because one of skill in the art could not recognize if the peptide has activity or not, as required by the claim, by visually looking at the peptide. Similarity to the peptides which have activity does not mean that the "new", homologous peptides will also have the same activity of modulating weight body mass. This would require testing each molecule which could be synthesized, and then determining which of those molecules would work in the manner required by the claims. This is not a proper written description of the claimed invention, but merely an invitation to experiment.

6. Claims 1-4, 6-18, 31-34, 39, 45, 48, 56 and 61 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a leptin fragment comprising the amino acid sequence of SEQ ID NO:2 or 18 (murine and human, respectively), does not reasonably provide enablement for a leptin peptide lacking these amino acid sequences, such as % homology, amino acid substitutions, derivatives, etc. as recited in the claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Applicant asserts that "the specification does provide[s] proper and sufficient enabling support for substituted and derivatized peptides" (see response at page 5). This assertion is not supported by any facts or evidence of record, and therefore, the rejection is maintained for the reasons of record. The specification is only enabling for leptin peptides having a naturally occurring amino acid sequence (such as SEQ ID NO:2 or 18) because it does not describe the production of any leptin peptide ***lacking*** that sequence. Applicant's reliance that the specification states that substitutions and derivitizations could be made is not the same as providing examples of molecules which have been altered and found to retain the required biological activity. The specification fails to describe those molecules, other than the peptides of SEQ ID NO:2 and 18, which have body mass modulating ability. Additionally, the pending claims encompass non-naturally occurring mutants of leptin having the disclosed amino acid sequences but does not explicitly identify those amino acid residues which are critical for the biological activity of modulating body mass. In the absence of guidance, a practitioner of the art of molecular biology would have to resort to a substantial amount of experimental trial and error in the form of deletional and substitutional analysis to identify those critical residues as would be needed to produce a mutant of the disclosed peptide. This trial and error would clearly constitute undue experimentation and, therefore, the instant specification is not enabling for the production of such mutants, which are clearly claimed. The standard for an enabling disclosure is not one of making and testing and the claims constitute a "wish to know". Therefore, the claims are not enabled for their full breadth as outlined above.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 8-11 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8-11 and 45 are unclear and indefinite for reciting "mammalian", "murine", "human", and "synthetic" in that it is not clear these peptides are to be distinguished one from another when the only physical limitations present are amino acid sequence. In other words, what would make a peptide "human" rather than "synthetic" if they both have the same amino acid sequence? Wouldn't a synthetic peptide which has a human amino acid sequence be a human peptide? Or if a peptide which has an amino acid sequence which is common to both the murine and human peptides, it is human or murine? Applicant may wish to clarify these claims as product by process claims, since the recitation of "mammalian", "murine", "human", and "synthetic" fail to convey any distinguishing limitations for the reasons provided above.

Applicant did not address this ground of rejection.

### *Claim Rejections - 35 USC § 102*

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 4, 6, and 12 are rejected under 35 U.S.C. 102(a/b) as being anticipated by Grasso et al. (Endocrinol. 138:1413-1418, 1997). for reasons of record in paper #15.

11. Claims 4, 6, 12, and 61 are rejected under 35 U.S.C. 102(a) as being anticipated by Al-Barazanji et al. (WO 97/46585, 12/11/1997).

Al-Barazanji et al. teach leptin peptides, including a peptide which comprises the amino acid sequence of SEQ ID NO:18 (see page 1, lines 35-39), wherein the peptides modulate body mass, thereby, anticipating the instant claims.

***Allowable Subject Matter***

12. Applicant should note that the references cited above fail to specifically teach the 7 amino acid fragment of SEQ ID NO:18. Therefore, a claim limited to a peptide consisting of the amino acid sequence of SEQ ID NO:18 (as well as the murine equivalent, SEQ ID NO:2) would avoid the prior art of record, as well as meeting the requirements of enablement and written description.

***Conclusion***

13. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Christine J. Saoud, Ph.D., whose telephone number is (703) 305-7519. The Examiner can normally be reached on Monday to Thursday from 8AM to 2PM. If attempts to

reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623.

Certain papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1 (CM1). The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. §§ 1.6(d) and 1.8). NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by Applicant or Applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers.

Official papers filed by fax should be directed to (703) 872-9306. If this number is out of service, please call the Group receptionist for an alternate number. Official papers filed After Final rejection filed by fax should be directed to (703) 872-9307.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

CHRISTINE J. SAOUD
PRIMARY EXAMINER

Christine J. Saoud